On September 28, 2011, at the request of Michael Ha, we attended a Teleconference with the following personal from FCC:

- Michael Ha, Office of Engineering and Technology (OET)
- Brett Greenwalt, OET
- Steve Jones, OET
- Chip Fleming, International Bureau (IB)
- Sankar Persaud, IB (via phone)

From Septentrio the following employees attended the call:

- Wim De Wilde, System Architect
- Pierre Nemry, Lead Test Engineer

Septentrio designs and manufacturers a family of GNSS board level components and receiving electronics.
Septentrio was involved with the TWG and testing at NAVAIR.
The content of the meeting was mainly Septentrio answering technical questions related to the TWG test report, its product portfolio, the company structure and its customers. The focus was to help the Commission understand why there was such a large variation in the TWG test results between the two Septentrio products in the test.

The product with excellent performance was a GPS/GLONASS L1/L2 receiver with an L1/L2 companion antenna.

The product with poor robustness against LightSquared interference was a GNSS product design that uses very wide band (100MHz) L1 channel signal processing. It accepts and processes MSS signals as well as GPS, Galileo, COMPASS and GLONASS signals in the same channel, even though MSS was disabled in the version used in the tests. This was paired with a wide band GNSS/MSS antenna. This combination offers no filtering whatsoever against the LightSquared signals. This very wide band combination is typical for high end geodetic and scientific applications as it minimizes multipath error. Besides, reception of as many satellites as possible is necessary for optimal performance and customer satisfaction, including satellites of the COMPASS system. The COMPASS signals are that close to the LightSquared band that both services are completely incompatible.

Septentrio indicated that the performance of this receiver could be somewhat improved by retuning one of the digital filters, although it would still remain highly susceptible to LightSquared interference. This receiver was designed with a space-to-earth 1525-1560 MHz spectrum in mind.

Septentrio referred to the following ION paper, which shows the front-end design of this receiver:

http://www.ion.org/search/view_abstract.cfm?jp=p&idno=8404

Septentrio pointed out that GNSS receivers are not very susceptible to low duty cycle pulsed interference. Therefore the interference impact of LightSquared would be minor if the LightSquared transmitters would only be active during 10% of the time with burst shorter than a few ms, while boosting the instantaneous signal power by factor 10. In theory bitrates would remain equal as the average channel power is equal. GPS could be used for the required time-synchronization.